



U.S. Department
of Transportation

Pipeline and
Hazardous Materials
Safety Administration

COMPETENT AUTHORITY CERTIFICATION
FOR A FISSILE
RADIOACTIVE MATERIALS PACKAGE DESIGN
CERTIFICATE USA/9217/AF, REVISION 13

400 Seventh St., S.W.
Washington, D.C. 20590

This certifies that the radioactive materials package design described below has been certified by the Competent Authority of the United States as meeting the regulatory requirements for a packaging for fissile radioactive materials as prescribed in the regulations of the International Atomic Energy Agency¹ and United States of America² regulations.

1. Package Identification - ANF-250.
2. Package Description and Authorized Radioactive Contents - as described in U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9217, Revision 13 (attached).
3. Criticality -
 - a. Minimum Criticality Safety Index (CSI) and Allowable Number of packages based on criticality:
 - (1) For dry uranium oxide powder enriched to a maximum 5 w/o in the U-235 isotope (as limited in NRC certificate para 5(b)(2)(i): CSI is 1.8 and the number of packages transported in a single freight container or conveyance is limited by Table X of the IAEA regulations.
 - (2) For dry uranium oxide pellets enriched to a maximum 5 w/o in the U-235 isotope (as limited in NRC certificate para 5(b)(2)(ii): CSI is 0.6 and the number of packages transported in a single freight container or conveyance is limited by Table X of the IAEA regulations.
 - (3) For uranium oxide powder or pellets enriched to a maximum 1 w/o in the U-235 isotope (as limited in NRC certificate para 5(b)(2)(iii) and 5(b)(2)(iv)): CSI is 0.4 and the number of packages transported in a single freight container or conveyance is limited by Table X of the IAEA regulations.
 - b. The criticality analysis considered the presence of water in all void spaces.

¹ "Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials, 1973 Revised Edition, as amended," published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

² Title 49, Code of Federal Regulations, Parts 100 - 199, United States of America.

CERTIFICATE USA/9217/AF, REVISION 13

4. General Conditions -


- a. Each user of this certificate must have in his possession a copy of this certificate and all documents necessary to properly prepare the package for transportation. The user shall prepare the package for shipment in accordance with the documentation and applicable regulations.
- b. Each user of this certificate, other than the original petitioner, shall register his identity in writing to the Office of Hazardous Materials Technology (DHM-23), Research and Special Programs Administration, U.S. Department of Transportation, Washington, D.C. 20590-0001.
- c. This certificate does not relieve any consignor or carrier from compliance with any requirement of the Government of any country through or into which the package is to be transported.

5. Marking and Labeling - The package shall bear the marking USA/9217/AF in addition to other required markings and labeling.

6. Expiration Date - This certificate expires on June 30, 2010.

This certificate is issued in accordance with paragraph 814 of the IAEA Regulations and Section 173.471 of Title 49 of the Code of Federal Regulations, in response to the April 28, 2005 petition by Framatome ANP of Richland, WA and in consideration of other information on file in this Office.

Certified by:


Robert A. McGuire

Acting Associate Administrator For Hazardous Materials Safety

MAY 27 2005

(DATE)

Revision 13 - Issued to endorse U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9217, Revision 13, and extend the expiration date.

**CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES**

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE	PAGES
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2. PREAMBLE

- a. This certificate is issued to certify that the package (packaging and contents) described in Item 5 below meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging and Transportation of Radioactive Material."
- b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.
3. THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

a. ISSUED TO (Name and Address)

Framatome ANP Richland, Inc.
2101 Horn Rapids Road
Richland, WA 99352-0130

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Siemens Power Corporation application
dated January 26, 2000, as supplemented.

4. CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

5.

(a) Packaging

(1) Model No. ANF-250

(2) Description

A uranium oxide powder/pellet shipping container. The packaging consists of a 16-gauge steel inner vessel, approximately 11-1/2 inches ID by 57 inches long, with a bolted and gasketed top flange closure and steel welded bottom plate. The inner vessel is centered and supported in a 22-1/2-inch ID by 68-3/8-inch long, 16-gauge steel drum by twelve 1/4-inch diameter spring steel rods welded to the inner vessel at the top and the bottom of the vessel. A 3/8-inch thick steel flange and a 16-gauge inner band position and support the top of the inner vessel within the outer container. The annulus between the inner vessel and outer container is filled with vermiculite.

The inner vessel is closed by six 1/2-inch square shank studs with hex head nuts at each end. The outer container is closed with a 12-gauge locking ring with drop forged lugs and a 5/8-inch diameter bolt and lock nut. A product container insert is positioned within the inner vessel.

The maximum gross weight of the packaging and contents is 616 pounds.

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(3) Drawings

- (i) The ANF-250 shipping container is constructed in accordance with Siemens Power Corporation Drawing No. EMF-306,175, Rev. 16.
- (ii) The pellet shipping suit case is constructed in accordance with Siemens Power Corporation Drawing No. EMF-304,306, Rev. 8.
- (iii) The powder and pellet product container inserts are constructed in accordance with Siemens Power Corporation Drawing No. EMF-306,176, Rev. 6, Sheets 1 and 2.

5.(b) Contents

(1) Type and form of material

- (i) Dry uranium oxide powder enriched to a maximum 5.0 w/o in the U-235 isotope.
- (ii) Dry uranium oxide pellets enriched to a maximum 5.0 w/o in the U-235 isotope.
- (iii) Uranium oxide pellets enriched to a maximum of 1 w/o in the U-235 isotope.
- (iv) Uranium oxide powder enriched to a maximum of 1 w/o in the U-235 isotope.

(2) Maximum quantity of material per package

Not to exceed 310 pounds and:

- (i) For the contents described in 5(b)(1)(i):

The contents not to exceed the following:

Maximum Enrichment (wt% U-235)	Maximum Uranium Mass (kg U)	Maximum U-235 Mass (kg U-235)
3.4	62.4	2.12
3.8	41.0	1.56
4.6	31.2	1.44
5.0	27.7	1.38

Not to exceed a maximum mass of 1149 g H, considering all sources of hydrogenous material within the inner vessel. The contents must be contained in product container described in 5(a)(3)(iii).

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- (ii) For the contents described in 5(b)(1)(ii):

The total contents not to exceed 120 kg U, with the U-235 content not to exceed 6 kg. Not to exceed a maximum mass of 1149 g H, including a maximum mass of 600 g polyethylene, considering all sources of hydrogenous material within the inner vessel. The contents must be contained in product container described in 5(a)(3)(ii).

- (iii) For the contents described in 5(b)(1)(iii):

The total contents not to exceed 120 kg U, with the U-235 content not to exceed 1.2 kg. The contents must be contained in product container described in 5(a)(3)(ii).

- (iv) For the contents described in 5(b)(1)(iv):

The total contents not to exceed 120 kg U, with the U-235 content not to exceed 1.2 kg. The contents must be contained in product container described in 5(a)(3)(iii).

5.(c) Criticality Safety Index

Minimum criticality safety index to be shown on label for nuclear criticality control:

For contents described in 5(b)(1)(i) and limited in 5(b)(2)(i):

1.8

For contents described in 5(b)(1)(ii) and limited in 5(b)(2)(ii):

0.6

For contents described in 5(b)(1)(iii) and 5(b)(1)(iv), and limited in 5(b)(2)(iii) and 5(b)(2)(iv):

0.4

6. In addition to the requirements of Subpart G of 10 CFR Part 71:

- The package must be prepared for shipment and operated in accordance with the Operating Procedures in Chapter 7 of the application.
- The packaging must meet the Acceptance Tests and Maintenance Program in Chapter 8 of the application.

7. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.

8. Expiration date: June 30, 2010.

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REFERENCES

Siemens Power Corporation application dated January 26, 2000.

Supplements dated: January 31, June 6, June 15 and September 29, 2000; February 6 and August 21, 2001; and December 16, 2004

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Robert Lewis
Robert Lewis, Chief
Licensing Section
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

Date: 24 March 2005

